



3 NSF router as a new router ID and a secondary Internet protocol (IP) address of the NSF  
4 router as a source IP address of a packet.

1 6. The method of Claim 5 further comprising the steps of:  
2       sending Hello packets from the NSF router to the neighbor as both the NSF router  
3 and as a new router over the broadcast interface;  
4       creating a neighbor data structure for the fake adjacency at the neighbor in re-  
5 sponse to receiving Hello packets from the new router;  
6       synchronizing the LSDBs between the neighbor and new router; and  
7       realizing the existing and fake adjacencies at the neighbor.

1 7. Apparatus for resynchronizing a link state database (LSDB) of a non-stop forwarding  
2 (NSF) router with a LSDB of a neighbor while maintaining an existing adjacency with  
3 the neighbor over an interface of the NSF router that was established before a software  
4 reload on the NSF router, the apparatus comprising:  
5       means for establishing a fake adjacency with the neighbor over the interface of  
6 the NSF router used for the existing adjacency with the neighbor;  
7       means for maintaining the existing adjacency between the NSF router and the  
8 neighbor over the interface; and  
9       means for allowing the NSF router to continue receiving and forwarding data  
10 packet traffic over the existing adjacency.

1 8. The apparatus of Claim 7 further comprising means for exchanging the LSDB be-  
2 tween the neighbor and NSF router.

1 9. The apparatus of Claim 7 further comprising:  
2       means for transitioning a finite state machine (FSM) of the neighbor from an Ex-  
3 Start state to a Full state;

4 means for sending an empty database description packet from the NSF router to  
 5 the neighbor over the fake adjacency to ensure that the neighbor does not request any link  
 6 state acknowledgement packets over the fake adjacency; and  
 7 upon the neighbor FSM reaching the Full state, means for dropping the fake adja-  
 8 cency.

1 10. The apparatus of Claim 9 wherein the means for dropping comprises means for send-  
 2 ing one of empty Hello packets and no Hello packets from the NSF router over the fake  
 3 adjacency.

1 11. The apparatus of Claim 10 wherein the interface is a broadcast interface.

1 12. The apparatus of Claim 11 further comprising:

2 means for sending Hello packets from the NSF router to the neighbor as both the  
 3 NSF router and as a new router over the broadcast interface;

4 means for creating a neighbor data structure for the fake adjacency at the neighbor  
 5 in response to receiving Hello packets from the new router; and

6 means for synchronizing the LSDBs between the neighbor and new router.

1 13. A computer readable medium containing executable program instructions for resyn-  
 2 chronizing a link state database (LSDB) of a non-stop forwarding (NSF) router with a  
 3 LSDB of a neighbor while maintaining an existing adjacency with the neighbor over an  
 4 interface of the NSF router that was established before a software reload on the NSF  
 5 router, the executable program instructions comprising program instructions for:

6 establishing a fake adjacency with the neighbor over the interface of the NSF  
 7 router used for the existing adjacency with the neighbor;

8 maintaining the existing adjacency between the NSF router and the neighbor over  
 9 the interface; and

10 allowing the NSF router to continue receiving and forwarding data packet traffic  
 11 over the existing adjacency.

1 14. The computer readable medium of Claim 13 further comprising program instructions  
2 for using the fake adjacency to exchange the LSDB between the neighbor and NSF  
3 router.

1 15. The computer readable medium of Claim 13 further comprising program instructions  
2 for:

3       transitioning a finite state machine (FSM) of the neighbor from an ExStart state to  
4 a Full state;

5       sending an empty database description packet from the NSF router to the neighbor  
6 over the fake adjacency to ensure that the neighbor does not request any link state ac-  
7 knowledgement packets over the fake adjacency; and

8       upon the neighbor FSM reaching the Full state, dropping the fake adjacency.

1 16. The computer readable medium of Claim 15 wherein the program instruction for  
2 dropping comprises the program instruction for sending one of empty Hello packets and  
3 no Hello packets from the NSF router over the fake adjacency.

1 17. The computer readable medium of Claim 16 wherein the interface is a broadcast in-  
2 terface and wherein the program instruction for establishing comprises the program in-  
3 struction for using a secondary router identifier (ID) of the NSF router as a new router ID  
4 and a secondary Internet protocol (IP) address of the NSF router as a source IP address of  
5 a packet.

1 18. The computer readable medium of Claim 17 further comprising program instructions  
2 for:

3       sending Hello packets from the NSF router to the neighbor as both the NSF router  
4 and as a new router over the broadcast interface;

5       creating a neighbor data structure for the fake adjacency at the neighbor in re-  
6 sponse to receiving Hello packets from the new router;

7       synchronizing the LSDBs between the neighbor and new router; and

8 realizing the existing and fake adjacencies at the neighbor.

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